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Claims

[c1] 1. A tool holder assembly comprising:
a cutting tool having an end surface and a fluid passage;
a tool holder including:
a conduit adapted to provide a fluid to the fluid passage; and
a counterbore disposed coaxially with the conduit and adapted to receive the cutting tool, the counterbore having a mating surface disposed around the conduit; and
a seal disposed between the mating and end surfaces to inhibit fluid leakage.

[c2] 2. The tool holder assembly of claim 1 wherein the end surface further comprises a groove adapted to receive the seal.

[c3] 3. The tool holder assembly of claim 1 wherein the mating surface further comprises a groove adapted to receive the seal.

[c4] 4. The tool holder assembly of claim 1 wherein the mating surface includes a male portion and a first female portion adapted to receive the seal and the end surface includes a second female portion adapted to receive the

male portion such that the seal, male portion, and first and second female portions cooperate to inhibit fluid leakage.

[c5] 5. The tool holder assembly of claim 1 wherein the end surface includes a male portion and a first female portion adapted to received the seal and the mating surface includes a second female portion adapted to receive the male portion such that the seal, male portion, and first and second female portions cooperate to inhibit fluid leakage.

[c6] 6. A tool holder assembly for a cutting tool having an end surface and a fluid passage, the tool holder assembly comprising:
a tool holder including:
a conduit having a threaded interior section;
an adjustment screw having a threaded body section adapted to engage the threaded interior section and a flange section having a larger diameter than the threaded body section, the threaded body and flange sections defining an internal fluid passage disposed axially with a conduit;
a counterbore disposed coaxially with the conduit and adapted to receive the cutting tool; and
a sealing portion configured to inhibit fluid leakage between the flange section and the end surface.

[c7] 7. The tool holder assembly of claim 6 wherein the internal fluid passage further includes a chamfer disposed at an end proximate the flange section.

[c8] 8. The tool holder assembly of claim 6 wherein the adjustment screw further comprises a mating surface and the sealing portion further comprises a seal.

[c9] 9. The tool holder assembly of claim 8 wherein the end surface further comprises a groove adapted to receive the seal.

[c10] 10. The tool holder assembly of claim 8 wherein the mating surface further comprises a groove adapted to receive the seal.

[c11] 11. The tool holder assembly of claim 8 wherein the mating surface includes a male portion and a first female portion adapted to receive the seal and the end surface includes a second female portion adapted to receive the male portion such that the seal, male portion, and first and second female portions cooperate to inhibit fluid leakage.

[c12] 12. The tool holder assembly of claim 8 wherein the end surface includes a male portion and a first female portion adapted to received the seal and the mating surface

includes a second female portion adapted to receive the male portion such that the seal, male portion, and first and second female portions cooperate to inhibit fluid leakage.

[c13] 13. The tool holder assembly of claim 6 wherein the sealing portion further comprises a male portion disposed on the mating surface and a female portion disposed on the end surface that is adapted to receive the male portion.

[c14] 14. The tool holder assembly of claim 6 wherein the sealing portion further comprises a male portion disposed on the end surface and a female portion disposed on the mating surface that is adapted to receive the male portion.

[c15] 15. The tool holder assembly of claim 6 wherein the adjustment screw further comprises a connection tube disposed coaxially with the internal fluid passage at an end opposite the flange section.

[c16] 16. The tool holder assembly of claim 6 wherein the end surface further comprises a recessed portion disposed proximate the fluid passage.

[c17] 17. A tool holder assembly comprising:
a cutting tool having an end surface and a fluid passage;

a tool holder including:

a conduit adapted to provide a fluid to the fluid passage; and

a counterbore disposed coaxially with the conduit and adapted to receive the cutting tool, the counterbore having a mating surface disposed around the conduit; and

a sealing portion configured to inhibit fluid leakage between the cutting tool and the tool holder.

[c18] 18. The tool holder assembly of claim 17 wherein the sealing portion further comprises a male portion disposed on the mating surface and a female portion disposed on the end surface that is adapted to receive the male portion.

[c19] 19. The tool holder assembly of claim 17 wherein the sealing portion further comprises a male portion disposed on the end surface and a female portion disposed on the mating surface that is adapted to receive the male portion.

[c20] 20. The tool holder assembly of claim 17 wherein the end surface further comprises a recessed portion disposed proximate the fluid passage.